

WHAT IS CLAIMED IS:

1. An image processing apparatus comprising:

a image pickup element which picks up an image and  
outputs a color image signal;

5 a controlling section which outputs a signal that  
selects a color image output or a monochrome image  
output; and

a converting section which receives an input of  
the color image signal from the image pickup element,  
10 and in the case where the color image output is  
selected by the signal from the controlling section,  
outputs the color image signal, and in the case where  
the monochrome image output is selected, adaptively  
converts the color image signal into the monochrome  
15 image signal on the basis of a characteristic nature of  
the image so as to output the monochrome image signal.

2. An image processing apparatus comprising:

a image pickup element which picks up an image and  
outputs a color image signal and a monochrome image  
20 signal;

a controlling section which outputs a signal that  
selects a color image output or a monochrome image  
output; and

a converting section which receives an input of  
25 the color image signal from the image pickup element,  
and in the case where the color image output is  
selected by the signal from the controlling section,

outputs the color image signal, and in the case where the monochrome image output is selected, and outputs the monochrome image signal that can be acquired by converting the monochrome image signal and the color image signal on the basis of a characteristic nature of the image.

3. An image processing apparatus according to claim 2, wherein

the converting section corrects a concentration level of the monochrome image signal by using the color image signal when the monochrome image is output.

4. An image processing apparatus comprising:

a image pickup element which picks up an original document and outputs a color image signal and a monochrome image signal;

a memory section which holds the monochrome image signal and the color image signal at the same time; and

a determining section which determines whether the image of the original document is color or monochrome on the basis of the color image signal.

5. An image processing apparatus which executes compression by dealing with a color difference signal in a lower resolution comparing with a luminance signal in a luminance/color-difference space concerning a color image signal, wherein

the color image signal is composed of a monochrome image signal and a color signal with a lower resolution

than that of the monochrome image signal, the luminance signal is generated from the monochrome image signal or the monochrome image signal and the color signal, and the monochrome image signal and the color signal are  
5 input by a monochrome sensor and a color sensor with a lower resolution than that of the monochrome sensor.

6. An image processing apparatus which decodes a compressed signal by dealing with a color difference signal in a lower resolution comparing with a luminance  
10 signal in a luminance/color-difference space concerning a color image signal and generates a decoded image signal, wherein

the decoded image signal is composed of a monochrome image signal with a high resolution and a  
15 color image signal with a low resolution.

7. An image processing apparatus comprising:  
image pickup means for picking up an image and outputting a color image signal;

controlling means for outputting a signal that  
20 selects a color image output or a monochrome image output; and

converting means for receiving an input of the color image signal from the image pickup element, and for, in the case where the color image output is  
25 selected by the signal from the controlling means, outputting the color image signal, and in the case where the monochrome image output is selected,

adaptively converting the color image signal into the monochrome image signal on the basis of a characteristic nature of the image so as to output the monochrome image signal.

5           8. An image processing apparatus comprising:  
          image pickup means for picking up an image and  
          outputting a color image signal and a monochrome image  
          signal;

          controlling means for outputting a signal that  
10       selects a color image output or a monochrome image  
          output; and

          converting means for receiving an input of the  
          color image signal from the image pickup means, and  
          for, in the case where the color image output is  
15       selected by the signal from the controlling section,  
          outputting the color image signal, and in the case  
          where the monochrome image output is selected,  
          outputting the monochrome image signal that can be  
          acquired by converting the monochrome image signal and  
20       the color image signal on the basis of a characteristic  
          nature of the image.

          9. An image processing apparatus comprising:  
          image pickup means for picking up an original  
          document and outputting a color image signal and a  
25       monochrome image signal;

          memory means for holding the monochrome image  
          signal and the color image signal at the same time; and

determining means for determining whether the image of the original document is color or monochrome on the basis of the color image signal.

10. An image processing method comprising:

5       picking up an image and outputting a color image signal by a image pickup element;

          outputting a signal that selects a color image output or a monochrome image output from a controlling section; and

10       receiving an input of the color image signal from the image pickup element, and in the case where the color image output is selected by the signal from the controlling section, outputting the color image signal, and in the case where the monochrome image output is  
15       selected, adaptively converting the color image signal into the monochrome image signal on the basis of a characteristic nature of the image so as to output the monochrome image signal by a converting section.

11. An image processing method comprising:

20       picking up an image and outputting a color image signal and a monochrome image signal by a image pickup element;

          outputting a signal that selects a color image output or a monochrome image output by a controlling  
25       section; and

          receiving an input of the color image signal from the image pickup element, and in the case where the

color image output is selected by the signal from the controlling section, outputting the color image signal, and in the case where the monochrome image output is selected, outputting the monochrome image signal that  
5 can be acquired by converting the monochrome image signal and the color image signal on the basis of a characteristic nature of the image by a converting section.

12. An image processing method according to  
10 claim 11, wherein a concentration level of the monochrome image signal is corrected by using the color image signal when the monochrome image is output, by the converting section.

13. An image processing method comprising:  
15 picking up an original document and outputting a color image signal and a monochrome image signal by a image pickup element;

holding the monochrome image signal and the color image signal at the same time by a memory section; and  
20 determining whether the image of the original document is color or monochrome on the basis of the color image signal by a determining section.

14. An image processing method which executes compression by dealing with a color difference signal  
25 in a lower resolution comparing with a luminance signal in a luminance/color-difference space concerning a color image signal, wherein

the color image signal is composed of a monochrome image signal and a color signal with a lower resolution than that of the monochrome image signal, the luminance signal is generated from the monochrome image signal or the monochrome image signal and the color signal, and the monochrome image signal and the color signal are input by a monochrome sensor and a color sensor with a lower resolution than that of the monochrome sensor.

15. An image processing method which decodes a compressed signal by dealing with a color difference signal in a lower resolution comparing with a luminance signal in a luminance/color-difference space concerning a color image signal and generates a decoded image signal, wherein the decoded image signal is composed of a monochrome image signal with a high resolution and a color image signal with a low resolution.